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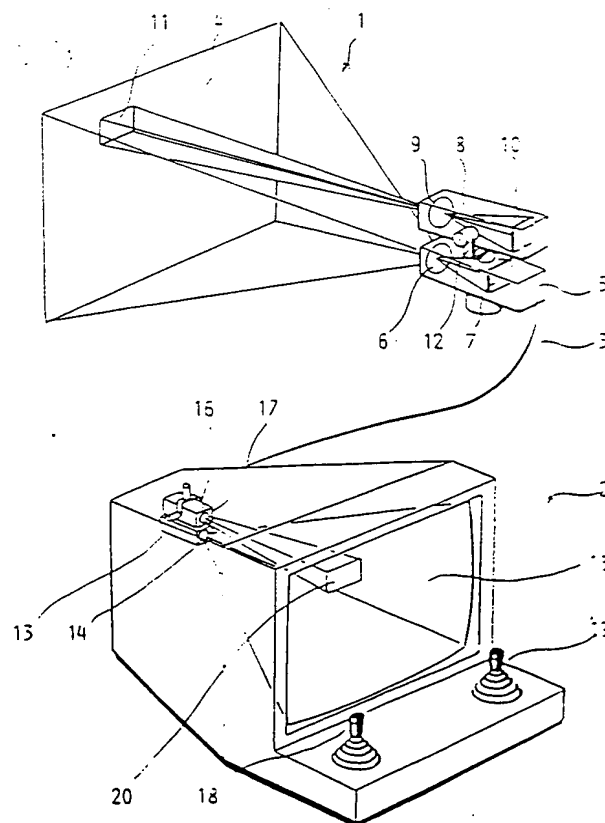
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(54) Title: A VISION SYSTEM WITH A PICTURE CAPTURE DEVICE AND A PICTURE REPRODUCTION DEVICE

(57) Abstract

A vision system comprises a picture capture device (1) with at least two camera means (5, 8) each having an optical means (6, 9) and an electro-optical detection means (7, 10), and a picture reproduction device with at least one display field (15) in which pictures from the camera means can be displayed simultaneously. The vision system is characterized particularly in that a first camera means (5) is arranged to register a first picture with a relatively large first viewing angle of an object field (4) whereas a second camera means (8) is arranged to register a second picture with a smaller second viewing angle (11) within said first viewing angle of said object field (4), whereby the picture reproduction device (2) is arranged to reproduce the first picture, the second picture replacing, to an optional degree, that part of the first picture which corresponds to said second viewing angle, whereby the first and second viewing angles have the same relative direction to the object field as in the pictures reproduced by the picture reproduction device (2), whereby the relationship object field extension/picture reproduction extension is the same for the first and the second pictures.



Claims

1. A vision system comprising a picture capture device (1) with at least a first camera means (5) and a second camera means (8), each of which camera means comprising an optical means (6, 9) and electro-optical detection means (7, 10), further comprising a picture reproduction device (2), arranged so as to simultaneously reproduce pictures from said camera means (5, 8) in at least one display field (15), characterized in that the first camera means (5) is arranged to register a first picture with a relatively large first viewing angle of an object field (4), whereas the second camera means (8) is arranged to register a second picture, with a smaller second viewing angle (11) within said first viewing angle of said object field (4), the picture reproduction device (2) being arranged to reproduce the first picture, the second picture replacing to an optional degree that part of the first picture which corresponds to said second viewing angle, whereby the first and second viewing angles have the same relative direction to the object field as in the pictures reproduced by the picture reproduction device (2), whereby the relationship object field extension/picture reproduction extension is the same for the first and second pictures.
2. A vision system according to claim 1, characterized in that the picture reproduction device (2) is arranged to principally completely replace that part of the first picture which corresponds to the second viewing angle.
3. A vision system according to claim 1, characterized in that the first camera means (5) is direction controlled.
4. A vision system according to claim 3, characterized in that the second camera means (8) is fixed

relative to the first camera means (5) preferably with said second viewing angle positioned essentially in the centre of said first viewing angle.

5. A vision system according to claim 3, c h a r a c t e-
5 r i z e d in that the second camera means (8) is direction
controlled relative to the first camera means (5).
6. A vision system according to any one of claims 3 to 5,
c h a r a c t e r i z e d in that the first camera means
10 (5) and/or the second camera means (8) is arranged to be
direction controlled by means of servo means.
7. A vision system according to any one of claims 1 to 6,
c h a r a c t e r i z e d in that the picture reproduction
device (2) comprises a first picture producing means (21)
15 arranged to reproduce said first picture from a first camera
means (5) and a second picture producing means (25) arranged
to reproduce said second picture from a second camera means
(8), and comprises further a mirror (28, 29) arranged in
front of the first picture producing means (21) reflecting
20 the second picture from the second picture producing means
(25).
8. A vision system according to claim 7, c h a r a c t e-
r i z e d in that the mirror (28) is opaque.
9. A vision system according to claim 8, c h a r a c t e-
25 r i z e d in that the mirror (28) is fixed relative to
the second picture producing means (25), both mirror and
picture producing means being jointly controlled to move
relative to the first picture producing means (21) in cor-
respondence with the movements of the second camera means (8).
10. A vision system according to claim 7, c h a r a c t e-
30 r i z e d in that the mirror (29) is semi-opaque.

- 5 11. A vision system according to claim 10, c h a r a c t e -
r i z e d in that the second picture producing means (25)
with fixed orientation of its axis of symmetry (26) rela-
tive to the mirror (29) is movably controlled within the
reflection range of the mirror (29).
- 10 12. A vision system according to any one of claims 1 to 5,
c h a r a c t e r i z e d in that the picture reproduction
device (2) comprises a cathode-ray tube (30) arranged to
alternately display pictures from a first and a second
camera means (5, 8), respectively, with an alternation
frequency such that an observer, due to the persistence
of vision, registers both pictures simultaneously.
- 15 13. A vision system according to any one of claims 1 to 6,
c h a r a c t e r i z e d in that the picture reproduction
device (2) comprises electronic means (41, 42, 43, 44)
arranged to combine signals emitted from the first and
second camera means (39, 40) into at least one combined
signal for producing a combined picture on the display
field (45).
- 20 14. A vision system according to any one of claims 1 to 6,
c h a r a c t e r i z e d in that the picture reproduction
device (2) comprises a first picture producing means (46)
arranged to reproduce said first picture from a first camera
means (5) and a second picture producing means (47) arranged
25 to reproduce said second picture from a second camera means
(8), the display field being constituted by a visual picture
plane (48) in which the reproduced first picture is sepa-
rately observable through a first ocular means (49) with
one eye (50) of an observer and the reproduced second picture
30 is separately observable through a second ocular means
(51) with the other eye (52) of an observer, in such a
way that the first and second pictures seem to the observer
to coincide due to integration in the observer's brain.